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## High Efficiency Air Conditioner Condenser Twisted Fan Blades and Hub

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(12) **United States Design Patent** (10) **Patent No.:** **US D510,998 S**  
**Parker et al.** (45) **Date of Patent:** **\*\* Oct. 25, 2005**

(54) **HIGH EFFICIENCY AIR CONDITIONER  
CONDENSER TWISTED FAN BLADES AND  
HUB**

D419,669 S \* 1/2000 Shinshi et al. .... D23/413  
6,129,528 A 10/2000 Bradbury ..... 417/423  
6,185,954 B1 2/2001 Smiley ..... 62/426

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(\*\*) Term: **14 Years**

(21) Appl. No.: **29/178,526**

(22) Filed: **Mar. 27, 2003**

(51) **LOC (8) Cl.** ..... **23-04**

(52) **U.S. Cl.** ..... **D23/411**

(58) **Field of Search** ..... D23/411, 413,  
D23/370, 378, 379; 416/223 R, 238, 244 R;  
D12/214; 62/426

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

2,638,757 A	5/1953	Borgerd	62/140
3,995,442 A	12/1976	Cavezza	62/259
4,470,271 A	9/1984	Draper	62/259.1
4,526,506 A	7/1985	Koger	415/98
4,971,143 A	11/1990	Hogan	165/122
4,971,520 A	11/1990	Van Houten	416/169
D316,700 S *	5/1991	Morrison	D12/214
D324,364 S *	3/1992	Hannon et al.	D12/214
5,320,493 A	6/1994	Shih	416/223
5,624,234 A	4/1997	Neely	416/238
5,809,800 A	9/1998	Deal	62/507

**OTHER PUBLICATIONS**

Kernstock, Slashing Through the Noise Barrier, *Defense Daily Network—Rotor & Wing's Cover Story*, Aug. 1999, p. 1–11.

\* cited by examiner

*Primary Examiner*—Lisa Lichtenstein

(74) *Attorney, Agent, or Firm*—Brian S. Steinberger; Law Offices of Brian S. Steinberger, P.A.

(57) **CLAIM**

The ornamental design for a high efficiency air conditioner condenser twisted fan blades and hub, as shown and described.

**DESCRIPTION**

FIG. 1 is a perspective view of a high efficiency air conditioner condenser twisted fan blades and hub.

FIG. 2 is a front side elevation view of the high efficiency air conditioner condenser twisted fan blades and hub of FIG. 1.

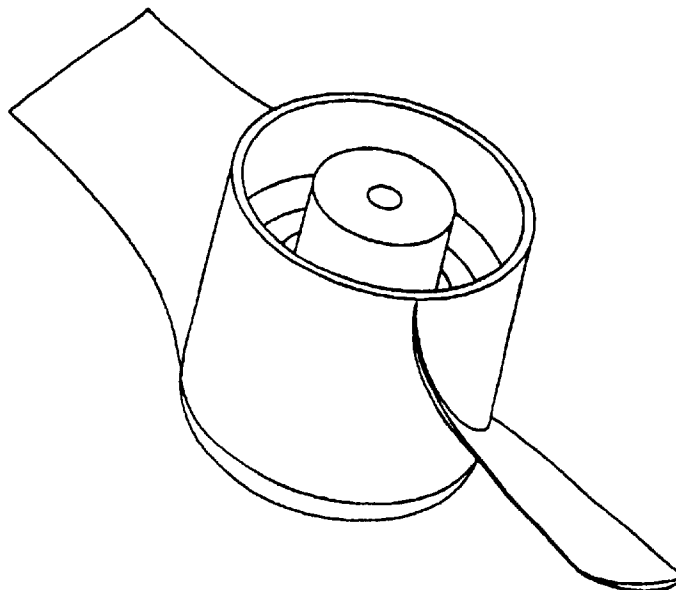
FIG. 3 is a left side end view of the high efficiency air conditioner condenser twisted fan blades and hub of FIG. 1.

FIG. 4 is a right side end view of the high efficiency air conditioner condenser twisted fan blades and hub of FIG. 1.

FIG. 5 is a bottom elevation view of the high efficiency air conditioner condenser twisted fan blades and hub of FIG. 1; and,

FIG. 6 is a top elevation view of the high efficiency air conditioner condenser twisted fan blades and hub of FIG. 1.

**1 Claim, 3 Drawing Sheets**



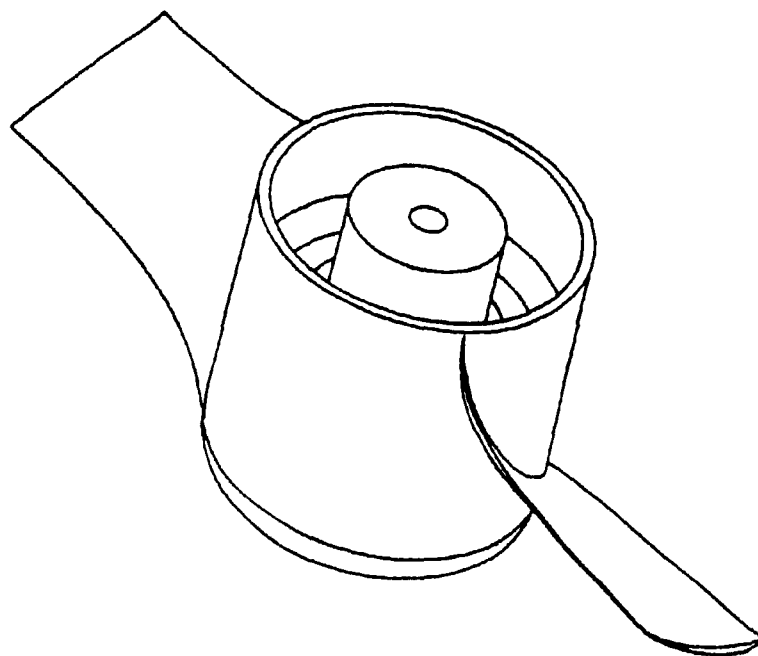


FIG. 1

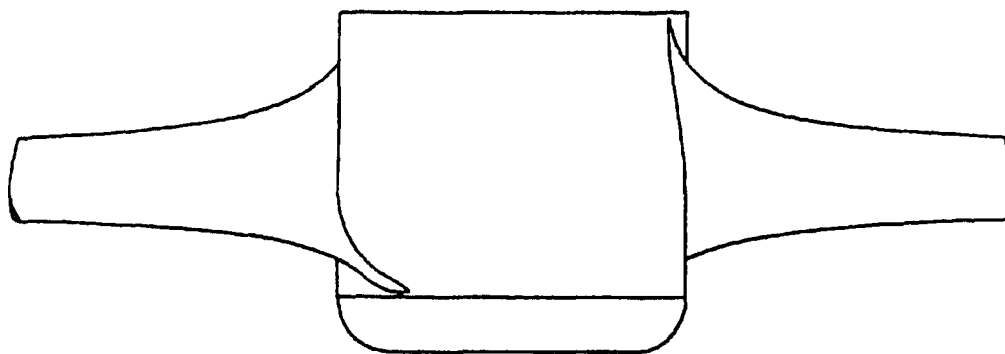


FIG. 2

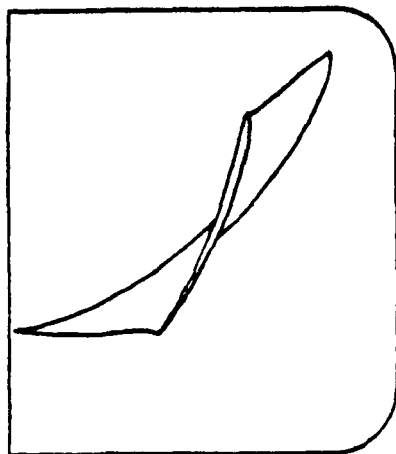


FIG. 4

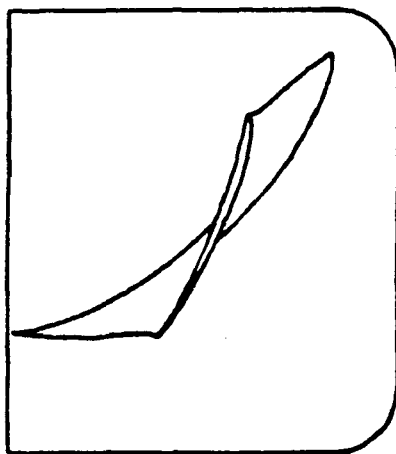


FIG. 3

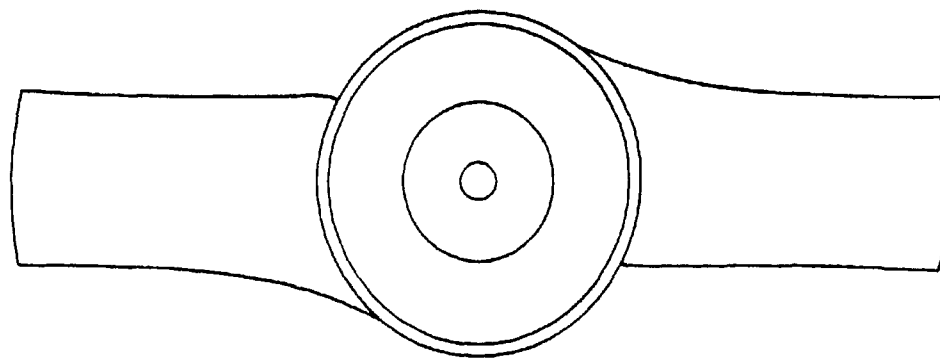


FIG. 5

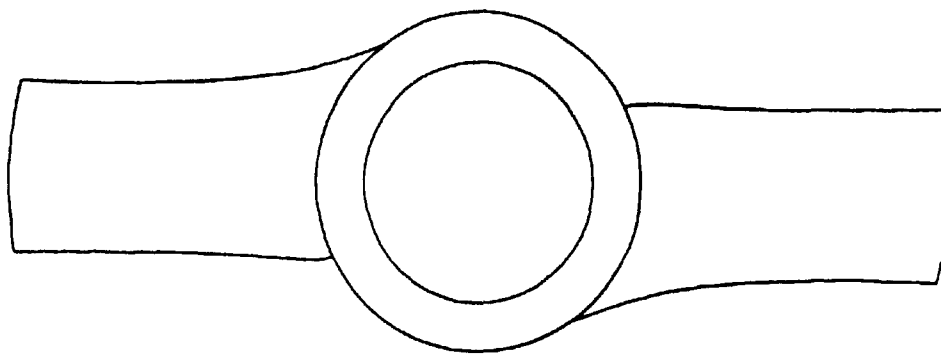


FIG. 6